# ENGINEERING NEWS-RECORD

A drydock has been built below Coulee Dam for the caisson to repair the spillway apron.

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# GETTING A 225,000-gpm PUMP OFF TO AN Easy Start

**Here's a case where G-E engineers were called in to recommend a motor *tough enough* to drive a vertical pump delivering 225,000 gallons of water a minute, yet *gentle enough* to start without disturbing the power supply. They specified a synchronous motor that not only met the requirements exactly, but also enhanced the appearance of the station.**

This storm-water project required nine pumps, each rated 225,000 gpm at a 25-ft head. Motor horsepower aggregated 18,000, yet the power-supply conditions ruled out excessive current surges and voltage disturbances. Motors for driving vertical pumps had to be started smoothly and accelerated smoothly with low starting currents.

G-E engineers recommended synchronous motors, each rated 2000 hp, 240 rpm. These motors were designed for part-winding starting. The chart shows why this was done. By starting the motor on part of the complete winding, the starting current and torque are significantly reduced. After a time interval, during which the power supply adjusts itself, the rest of the winding is energized. Starting is thus accomplished without opening the circuit, or otherwise creating excessive current surges at the transfer point.

Current increment at the transfer point is less than 250 per cent of the rated full-load current; maximum current during accelerating and synchronizing is less than 550 per cent. In less than 60 seconds, motor, pump, and water are accelerated from standstill to, and including, synchronization.

## SMOOTH STARTING WITH PART WINDING

This installation emphasizes the benefits of the synchronous motor arranged for part-winding starting. Control equipment is highly simplified. Acceleration is smooth, because the power circuit to the motor is not opened during the starting period. Even when high-current-interrupting capacity is required, simplicity of control is maintained.

If you are faced with an unusual problem in matching motor performance with pumping requirements, a synchronous motor with part-winding starting may be the answer. It will pay you to consult G-E engineers about special pumping problems. *General Electric Company, Schenectady, New York.*

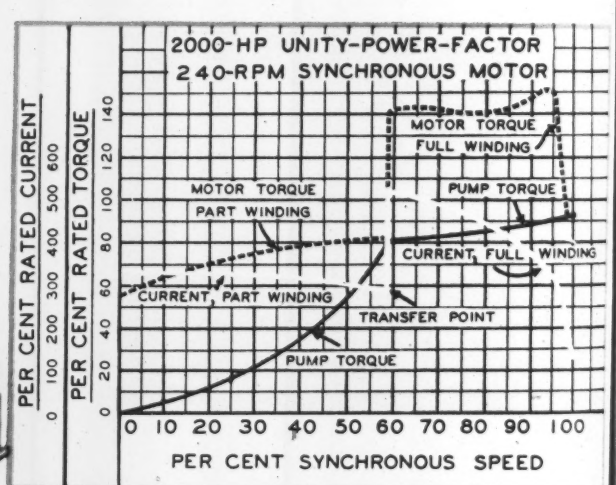


Chart of the starting characteristics of the G-E 2000-hp, unity-power-factor, 240-rpm synchronous motor arranged for part-winding starting.

BUY WAR BONDS

General Electric motors look as well as they perform. They "dress up" any pumping station.

GENERAL ELECTRIC

SYNCHRONOUS MOTORS

750-254-8030

The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • JULY 19, 1945 • VOLUME 135 • NUMBER 3

# Missouri basin planning started by Interior Dept.

## Funds allocated to eight agencies in the department to make engineering studies to permit an early postwar start on construction

Eight agencies of the Department of the Interior have been allocated an aggregate appropriation of $3,200,000 to launch immediately the department's part in the federal government's billion-and-a-half dollar program to develop the Missouri River basin, Secretary Ickes announced July 17. The agencies, Secretary Ickes said, will begin immediately to make engineering and economic studies and to prepare plans. They will work in close cooperation, he said, with the Corps of Engineers, governors of the Missouri basin states and other interests concerned.

The aim is to permit construction work to start as soon as the war with Japan ends, provided funds are supplied by Congress.

### Funds for studies

Funds allocated by the Secretary are as follows: Bureau of Reclamation, $1,710,000; Geological Survey, $936,000; Fish and Wildlife Service $252,000; Bureau of Mines, $200,000; Office of Indian Affairs, $37,500; General Land Office, $32,000; National Park Service, $26,000; and the Grazing Service, $6,500.

Activities during the current fiscal year will be centered on eleven projects among those authorized for construction under the Flood Control Act of 1944 (*ENR* Dec. 14, 1944, vol. p. 733). The amounts allotted each project, as given in the accompanying table, are considered sufficient to complete work prerequisite to starting construction.

An allocation of $100,000 is also set aside for continued investigation of authorized units, most of which will be spent on the Missouri-Souris project in North Dakota. For reports and general studies a fund of $150,000 is established.

The economic and related studies to be made by the Department of the Interior cover a wide range of subjects, all bearing upon maximum development of the basin's resources. In order to coordinate the work of the department's bureaus, a Missouri basin reports staff will be established at Billings, Mont., to which all agencies in the department will make monthly progress reports. The staff will prepare a composite report to inform Secretary Ickes of progress on the program and to indicate any action necessary for complete coordination.

Coordination of the activities of the Department of the Interior and the other federal agencies engaged in the developmental plan is to be brought about through the Missouri Basin Inter-Agency Committee. This committee was established March 29, 1945, by the Federal Inter-Agency River Basin Committee, which was created Dec. 29, 1943, to coordinate through the medium of reports the activities of all of the federal agencies during development work in the various river basins. The new committee expects to hold its first meeting in Omaha, Neb., on July 19.

By means of the committee, representatives of the departments of Interior, War, Agriculture, and the Federal Power Commission will work with the governors of Missouri, Nebraska, Wyoming and Montana, these four governors having been selected to represent the governors of all the ten Missouri basin states. Federal government representatives on the committee are: H. D. Comstock, director of Region 6, Bureau of Reclamation, Billings, Mont.; Brig. Gen. Roscoe C. Crawford, division engineer, Missouri River Division, Corps of Engineers, Omaha, Neb.; Benjamin H. Greene, acting regional engineer for the Federal Power Commission at Chicago; and A. E. McClymonds, regional conservator, Soil Conservation Service, Lincoln, Neb.

The committee is authorized to make decisions, provided they are unanimous. In case unanimous decisions are not reached, problems are to be referred to the Federal Inter-Agency River Basin Committee in Washington.

**PROJECT ALLOCATIONS**

| | |
|---|---|
| **Upper Missouri Basin** | |
| Canyon Ferry, Mont. | $125,000 |
| Marias, Mont. | 275,000 |
| **Yellowstone Basin** | |
| Boysen, Wyo. | 110,000 |
| Owl Creek, Wyo. | 54,000 |
| **Minor Western Tributaries** | |
| Angostura, S. D. | 105,000 |
| Heart River, N. D. | 160,000 |
| **Niobrara, Platte and Kansas Basins** | |
| Bostwick, Kans.-Nebr. (Franklin and Scandia units) | 55,000 |
| Frenchman-Cambridge, Nebr. | 262,000 |
| Glendo, Wyo. | 60,000 |
| Kirwin, Kans | 63,000 |
| Kortes, Wyo. | 110,000 |

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## Eight more states adopt plane coordinate system

Since the first of the year eight more states have formally adopted the plane coordinate system devised by the U. S. Coast and Geodetic Survey for transforming geodetic-position data for use in plane-surveying operations, the Geodetic Survey reports. The eight new states to take this action are: Georgia, Delaware, Rhode Island, Minnesota, Oregon, Washington, Nevada and Vermont.

Before Jan. 1 of this year eight other states had already adopted the system. These states are: New Jersey, Pennsylvania, New York, North Carolina, Maryland, Massachusetts, Texas and Louisiana.

A growing interest of the state highway departments in adoption of the system has been a major factor in the recent approvals, it is pointed out.

To permit more effective use and better understanding of the coordinate system a special 62-page manual entitled, "The State Coordinate Systems," has been prepared. Copies of this manual, which is designated Special Publication No. 235 of the U. S. Coast and Geodetic Survey, may be obtained at 25c. per copy from the Superintendent of Documents, Washington, D. C.

## Vacation with pay for construction workers

Construction workers in Ontario this year will enjoy vacations with pay for the first time, under legislation just passed. For some time workers have been receiving vacation stamps, representing the time equivalent to two percent of their pay.

Vacation periods are arranged by agreement. In the Toronto district, many jobs will close down from August 6 to 11. This period includes a regular civic holiday in the city of Toronto so that a 5-day shut-down will give workers a full week's vacation. The Ontario General Contractors Association assisted with arrangements and suggested some modifications in procedure.

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## Rochester's $2,500,000 war memorial building

Rochester, N. Y., will erect a $2,500,000 public building as a war memorial to be used as a sports arena, an auditorium, and a community and veterans' meeting place in honor of the 30,000 men and women from Rochester and Monroe County in the armed services.

The project was proposed in a war memorial survey report by an advisory committee that has been working with Mayor Samuel B. Dicker. The site selected is in downtown Court Street, where City Hall Annex and other buildings are located. These are to be torn down to make way for the modern structure.

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## Philadelphia to spend $9,000,000 for schools

The Philadelphia Board of Education has announced the selection of architects to make plans for nearly $9,000,000 of new school construction. The architects and schools are: Walter H. Thomas, a new vocational technical school to cost $2,500,000; Edward P. Simon, a senior high school, $1,800,000; Davis and Dunlap, a senior high school, $2,000,000; Howell Lewis Shea, a vocational school, $2,250,000; Baader-Young and Schultze, an elementary school, $425,000.

## Wheeler now commands India-Burma theater

Lt. Gen. Raymond A. Wheeler, veteran of more than three years service in the Far East and three times awarded the Distinguished Service Medal, has assumed command of the India-Burma Theater. In addition, he will continue his assignment as Deputy Supreme Commander and principal administrative officer of the South East Asia Command.

General Wheeler, a native of Peoria,

Ill., commanded SOS in the formative days of the CBI Theater, from March, 1942, to November, 1943, when he became principal administrative officer of the then newly-formed South East Asia Command. He was appointed Deputy Supreme Commander under Lord Mountbatten in November, 1944, when Lt. Gen. A. C. Wedemeyer was selected to command the new China Theater which resulted from the split of the CBI Theater.

The new I-B Theater commander was graduated from West Point in 1922 with a commission in the Corps of Engineers. As regimental commander of the 4th Engineers in France during World War 1 with the temporary rank of colonel, Wheeler, was awarded his first DSM. After the war he was an instructor at Fort Benning's infantry school from April, 1920, until July, 1922. Then began a four-year tour as Assistant Engineer Commissioner of the District of Columbia, followed by attendance at the Command and General Staff School. In June, 1927, as a major, he became Assistant Engineer of Maintenance for the Panama Canal.

From April, 1930, until August, 1936 Wheeler served as district engineer at Wilmington, N. C., and later at Rock Island, Ill. After graduation from the Army War College in 1937, he became resident member of the Board of Engineers, Washington, D. C.

In September, 1941, he was promoted to brigadier general and assigned to the office of the Chief of Staff in Washington. He became Acting Assistant Chief of Staff, Supply Division, G-4, on the General Staff. Late in 1941, he went overseas with a military mission charged with developing a supply line to Russia through the Persion Gulf. He was subsequently promoted to major general and assigned as Commanding General, SOS, in CBI.

After his transfer to SEAC, Wheeler received his first oak leaf cluster to the DSM for his organization, direction and supervision of supply and maintenance activities in CBI. He was recently awarded the second oak leaf cluster to the DSM for his services as deputy commander, SEAC. His promotion to Lieutenant general was approved Feb. 21, 1944.

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## Engineers' dispute stops Washington work

A strike by 14 members of the International Federation of Technical Engineers, Architects and Draftsmen's unions (A.F.L.) which had held up work on $20,000,000 of construction in Washington, D. C., for about a week ended on July 16 when the War Labor Board agreed to hold a hearing on their dispute with their employers, the Harwood-Nebell Construction Co., T. Calvin Owens and John McShain, Inc. The men had asked union recognition, wage increases, vacations with pay, and sick leave.

When the union demands were refused, the men formed picket lines, which 1700 men in affiliated unions refused to cross.

The WLB hearing is to be by a one-man panel, which is not empowered to consider recognition of the union as an area bargaining agency, one of the major issues raised by the strikers. A three-man panel would be required for that.

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# Inter-American highway work cost four times original estimate

***First expected cost to build pioneer road was set at $14,714,200, but if job had been completed an expenditure of $58,500,000 would have been required, Chief of Engineers testifies***

The construction work done by the U. S. Army Engineers in Central America on the Inter-American Highway cost $36,317,617 and if the project had been completed the job would have cost four times the original estimate Lt. Gen. Eugene Reybold, Chief of the Army Engineers, testified last week before the special Senate committee investigating the national defense program, which is commonly known as the Mead Committee. This group was also informed that the project, which was planned to provide a connection to the Panama Canal of sufficient capacity to maintain 60,000 troops in Panama, would not have been started had it been known that the submarine sinkings in the Caribbean and the Japanese menace in the Pacific were to be met so effectively. Although progress was slow and costly, over 600 mi. of road were completed, including all-weather surfacing, and clearing, grubbing and grading were carried out on considerable of the remainder, General Reybold further revealed.

### Cost estimates quickly mounted

Preliminary surveys to provide a pioneer highway from the Mexico-Guatamala border to the Panama Canal, a distance of 1,559 miles, showed that some 900 miles of road would have to be built. The original cost estimate, which was made in May, 1942, or about two months before the Army Engineers were ordered to proceed, was $14,714,200.

In Feb. 1943, the expected total cost was increased to $22,475,800, increased again in May, 1943, to $30,000,000, in September, 1943, revised upward to $55,000,000, and later placed in the neighborhood of $60,000,000. In April of this year a final estimate to determine how much the project, which was shut down in October, 1943, would have cost if actually completed fixed the final expected cost at $58,500,000.

Total expenditures from War Department allotments in connection with the project up to Feb. 28, 1945, were $42,715,591, it was reported. The net cost of the construction work done by the Corps. was established at $36,317,617. At the termination of the Army's activity on the project travel from the southern border of Mexico across Guatemala, El Salvador, Honduras, and Nicaragua to the western boundary of Costa Rica was possible, General Reybold's staff revealed.

At the hearing much discussion also centered on whether or not a major mistake occurred when the project was approved June 19, 1942, by the Commanding General, Services of Supply, and a decision approved by the Deputy Chief of Staff and concurred in by the Undersecretary of War on July 3, 1942. At this time submarine sinkings were severe in the Caribbean area, having mounted to 383,290 gross tons during the previous month. General Eisenhower, then head of Operations Division, War Department. General Staff, in a letter dated June 4, 1942, questioned the advisability of going ahead.

At that time General Eisenhower wrote "the Operations Division considers that the utility of the proposed road to the present war effort is problematical. Consequently, no justification exists for the diversion to this project of men or critical materials or equipment. Furthermore, it is believed that the necessary surveys can only be accomplished within the proposed time limit by civilian survey parties experienced in such operations. The use of troops inexperienced in such survey operations would tend to impede both the road's construction and the training of these troops.

"The Operations Division recommends: (a) that the War Department approve the road project for future construction in the interests of continental solidarity and for its possible long-range military value, and not on the ground of present military necessity; (b) that the Commanding General, Services of Supply, be authorized to supervise this construction by utilizing the office of the Chief of Engineers for that purpose, if and when it is determined by the Commanding General, Services of Supply, that construction of the road can be conducted without interfering with other military projects; (c) that no commitment be made at this time to assign Engineer troops to the project; and (d) that prior to commencing the survey, the Commanding General, Services of Supply, request the State Department to conduct the necessary negotiations with the country involved."

Brig. Gen. R. G. Moses as head of the Supply Division, in a letter dated May 28, 1942, wrote: "Although the need for the pioneer road at the present or during the war may be questioned, it appears to be a desirable project which should be started at this time subject to non-interference with more urgent construction projects and construction equipment requirements of the armed forces."

### Why it was decided to build

Regarding the decision to go ahead General Reybold testified as follows:

"It is certain that if the War Department had known in 1942 the facts it knows today the Pan-American Highway would never have been built. In other words, with knowledge that the Japanese menace in the Pacific would be met as soon as it was met and with knowledge that the submarine sinkings in the Caribbean would be decreased as they were decreased, there would have been no necessity to start construction of the highway as a matter of military insurance. So, looking backward, it may well seem that beginning the project as a rush project and continuing into the early fall of 1943 was an unnecessary expenditure of construction funds under abnormal and expensive conditions.

"But the Army could not know all these things in advance, and it is definitely certain that if the Japanese successes in the Pacific had not been effectively stopped and if the German submarine campaign in the Caribbean had continued unabated and if, as a result of these things, the Panama Canal had been endangered in 1944, the War Department would not have been forgiven—and should not have been forgiven—for its failure to construct a highway even if it had cost a great deal more than it did cost.

"It will be informative at this point to call your attention to the fact that in Central America there is a rainy season over all of the area that occurs generally between May and the middle of November. It was expected that by extremely vigorous mobilization of personnel, contractors' organization, equipment and material, the job could be finished during the next succeeding dry season. Earlier estimates were based on this assumption as the directive to construct was dated July 4, 1942. In point of time, that left only nineteen weeks during the rainy season to complete surveys, engage contractors, assemble, ship and secure delivery of equipment, and to recruit, house and arrange to subsist personnel. The expectation to complete during the next succeeding dry season was not realized, primarily for the reason that sufficient shipping space could not be secured as needed."

# Circular Drydock at Grand Coulee Dam

Drydocks are not often built far inland but one was recently completed in the river bank on the downstream side of Grand Coulee Dam. It was built there to provide a below-water-level site on which to erect a 1,600-ton steel floating caisson that is to be used to repair eroded concrete on the spillway bucket of the dam. This erosion was described in *ENR* July 13, 1944, vol. p. 41.

The drydock construction plan was to assemble a circular steel cutting edge on the right bank just below the dam and well back from the water's edge where there was prospect of keeping the excavation pumped dry as the work progressed. The cutting edge was made 163 ft. in diameter and on the top of it was built up, a section at a time as the sinking progressed, a reinforced concrete wall. Derricks at surface level lifted grab buckets and skips of spoil out of the ring as workmen shoveled material back from under the cutting edges. Sinking progressed in this manner until the cutting edge struck bedrock 77 ft. below surface level. Bedrock was then cleaned off and concrete columns were built up under the unsupported portions of the cutting edge.

Fundamentally, the drydock is designed to provide a base on which to erect the floating caisson in the dry. Hence when the foundation rock had been exposed, forms were placed in which to pour four concrete piers that would support the 1,600-ton caisson during erection. As these piers were carried up a gravel and cobble backfill was put in the bottom of the caisson until a level base was thus provided for the reinforced concrete floor slab. The latter bonds into the side wall in grooves left to make a watertight joint.

The drydock has an opening on the river side in which mitre gates, similar to those used in any graving drydock, are located. When the caisson is ready for service the drydock will be flooded, the mitre gates opened, and the caisson floated out through an approach channel into the Columbia River.

James W. Ball, of the U. S. Bureau of Reclamation, is in charge of design and operation of the caisson.

***Fig. 1. The drydock is located on a sheltered bay excavated below Grand Coulee Dam. An arrow indicates the temporary concrete bulkhead that will be dropped outward to the channel bottom when the mitre gates are installed.***

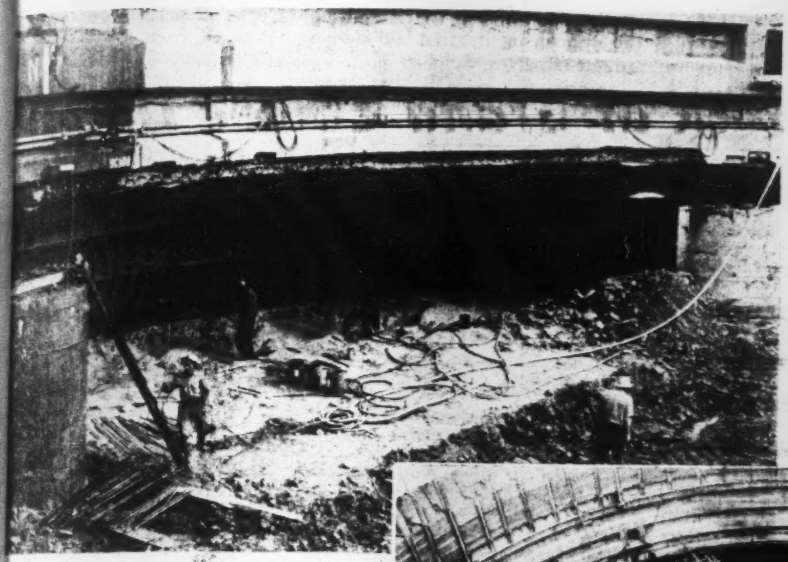

*Fig. 3. A backfill of cobbles and gravel was placed in the bottom of the drydock to provide a level base for a heavy concrete floor slab.*

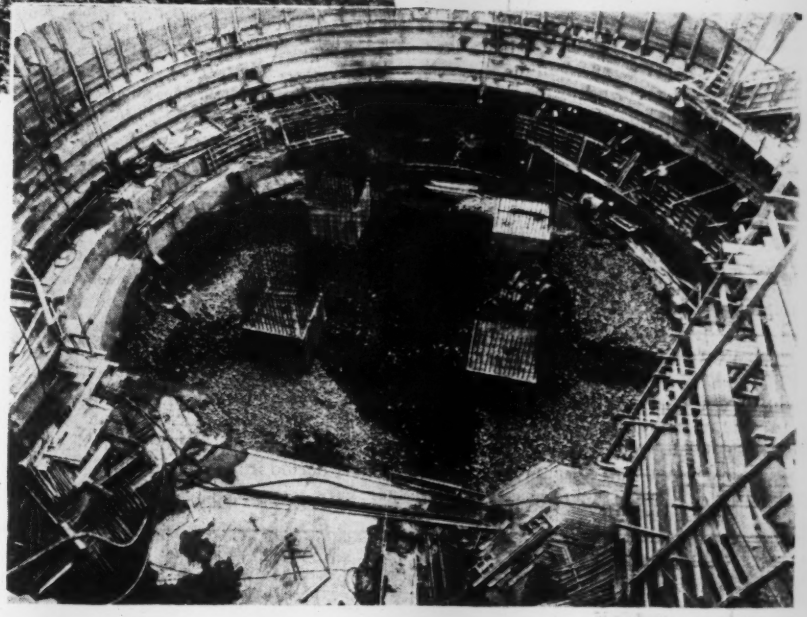

*Fig. 2. Cleaning up bedrock near the steel cutting edge of the 163-ft. dia. drydock. The drydock was sunk 77 ft. to bedrock under its own weight by excavating on the inside and building up the heavy concrete wall.*

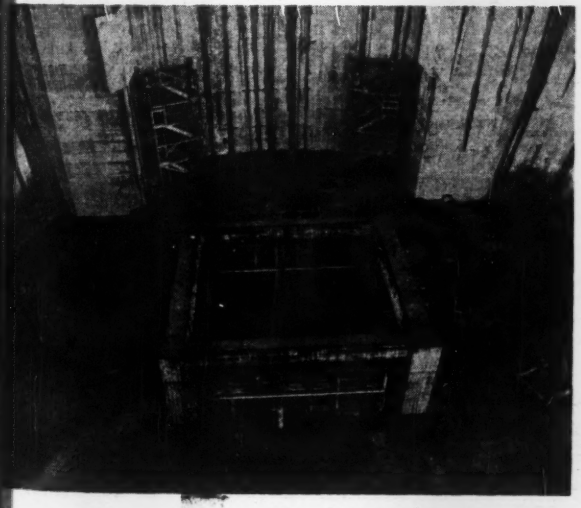

*Fig. 4. Interior nearing completion. Central structure is a base on which to erect the 1,600-ton steel floating caisson.*

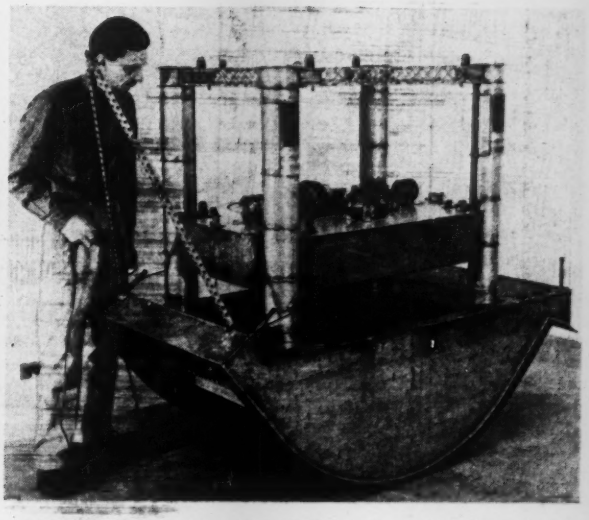

*Fig. 5. A 1:20 scale model of the caisson to be erected in the drydock and floated out for repairs on the dam.*

## Five years to build Narrows Tunnel at N. Y.

Estimating that the $62,000,000 actual cost of construction of a proposed Brooklyn-Staten Island vehicular tunnel under the Narrows at the entrance to New York Harbor can be financed by toll revenues, the New York City Tunnel Authority is ready to proceed with final plans and construction as soon as it is determined whether the bond issue will be underwritten by a private or public agency. The tunnel would connect the markets and parkways of Long Island with main highways to the south and west, permitting both truck and passenger traffic to bypass ferries and congested waterfront areas of New York City.

According to Ole Singstad chief engineer of the Tunnel Authority, one year would be required to prepare contract plans and specifications and four years to construct the two twin-tube lanes proposed. Land sections on both sides of the Narrows would be shield-driven and the section under open water may be shield driven or made of prefabricated sections sunk into a prepared trench. Mr. Singstad believes the latter method will be more economical but advocates taking bids on both methods.

The Narrows Tunnel together with the Brooklyn-Battery Tunnel and connecting parkways would permit a 16-min. motor trip from lower Manhattan to Staten Island and thus should stimulate development of Richmond, New York City's least populous borough. About 6,000,000 vehicles would be expected to use the tunnel in its first year of operation increasing over a period of years to its estimated capacity of 16,000,000 vehicles annually. Most of the immediate traffic would be drawn from existing city-owned ferries, one of which now operates at an annual loss of $240,000. This and one other ferry would be discontinued.

**COST OF NARROWS TUNNEL BROOKLYN TO STATEN ISLAND**

| | |
|---|---|
| Borings | $ 60,000 |
| Trench tunnel | 13,590,000 |
| Staten Is. Shaft and Tunnel | 12,880,000 |
| Brooklyn Shaft and Tunnel | 12,150,000 |
| Tunnel Lining and Bolts | 5,730,000 |
| Plazas and Approaches | 10,060,000 |
| Ventilation Buildings | 1,680,000 |
| Tunnel Finish and Paving | 1,240,000 |
| Fans, pumps, operating equipment | 1,000,000 |
| Electrical Installation | 2,250,000 |
| Compensating Dredging | 1,000,000 |
| Construction Cost | 61,640,000 |
| Engineering and Administration | 6,160,000 |
| | 67,800,000 |
| Interest during construction | 2,255,000 |
| | 70,055,000 |
| Real Estate and easements | 3,445,000 |
| Total | $73,500,000 |

The estimated cost of the facility is shown in an accompanying table. Operations are expected to cost about $640,000 per year at the start. After a short period it is probable that passenger cars will constitute 80 percent of the traffic, trucks 12 percent and buses 8 percent. Returns from tolls are expected to retire the $62,000,000 of bonds it is planned to issue. At the time they are paid out, in 40 years, there should be an accumulated surplus, estimated at $31,000,000 under favorable traffic conditions. However, the city at large is being asked to appropriate about $11,000,000 for approach highways and other costs.

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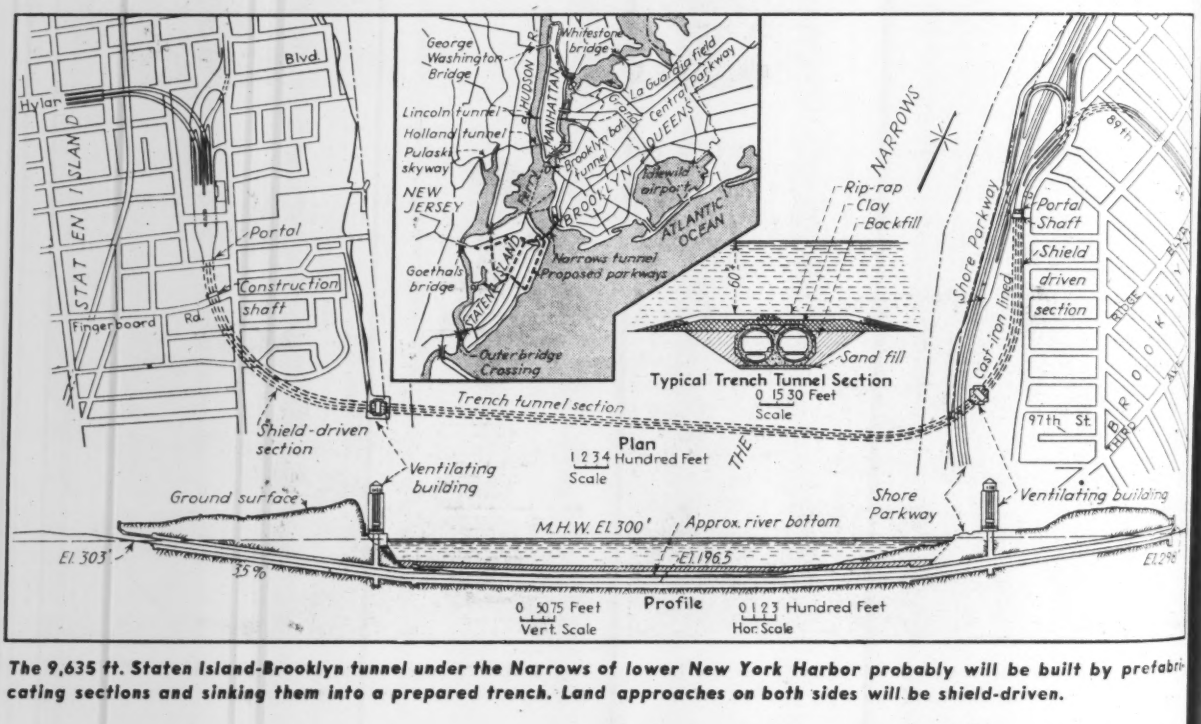
## D. C. appropriation bill signed by President

Construction in the District of Columbia calling for the expenditure of approximately $9,087,160 is provided in the District of Columbia Appropriation Bill for the fiscal year 1946, which has been signed by the president. Construction funds provided include: $2,126,560 for school buildings; $100,000 for the first unit of a new central library building; $72,300 for recreation facilities; $840,000 for additional construction at Gallinger Municipal Hospital; $285,000 for a receiving home; $2,600,000 for street and bridge work; $403,600 for an incinerator extension; $302,700 for a refuse transfer station; $1,040,000 for sewers; $1,000,000 for the water department, including $605,000 for a 30-in. trunk main in the Anacostia area. In addition, $317,000 is provided for the Army Engineers to enlarge and improve the Washington Aqueduct.




***The 9,635 ft. Staten Island-Brooklyn tunnel under the Narrows of lower New York Harbor probably will be built by prefabricating sections and sinking them into a prepared trench. Land approaches on both sides will be shield-driven.***

## OPA permits contractors to suggest pricing plan

Building contractors who have newly entered the industry or have shifted operations to an unfamiliar type of construction may file with the Office of Price Administration proposed ceiling prices or price determining methods to be used in computing their individual ceiling prices on lump-sum or cost-plus contract work.

Proposed pricing methods may be filed for any job performed on a contract basis with which the contractor has not had sufficient experience to base prices on those he has charged in the past for a comparable work, or for any other reason.

Applications should be filed with the Office of Price Administration, Building Materials Price Branch, Washington 25, D. C.

This procedure of applying to OPA for approval of a price is provided as the result of recommendations made by the OPA Board of Review following protest proceedings brought by the Associated General Contractors of America, Inc.

Boards of review are panels appointed from OPA officers and employes by the Price Administrator when a protest is filed against provisions of a price or rent regulation. The boards hear oral arguments, consider objections, and make recommendations.

Before this action, on a lump-sum or cost-plus contract job, the contractor figured his maximum price on the basis of current costs of materials and October 3, 1942, labor rates, with the addition of other actual direct costs, and a base period percentage margin of markup. Increases authorized by government wage agencies since that date could be added to maximum prices. Until now, however, an individual contractor could not suggest a maximum contract price or a contract price determining method of his own to OPA for approval.

OPA also announced that its regional administrators may, where conditions warrant, require building contractors operating on a unit price basis, to prepare and file with field offices statements of their maximum unit prices, and prepare and keep on hand records of their invoices and other business data.

Such orders, however, will be issued only when it is felt such action is necessary to insure price compliance. Price filing will not be required unless and until an order is issued by a regional administrator. Such a price filing order will apply only to the area designated in the order, and only to the particular types of sales or services the order specifies.

## Latest Engineer officers to become major generals

**Ewart G. Plank**

U. S. Signal Corps photos

**Stanley L. Scott**

*Two Engineer officers who have repeatedly distinguished themselves in assignments of constantly increasing responsibility since the beginning of the war—Ewart G. Plank and Stanley L. Scott—were confirmed last week by the Senate for promotion from the rank of brigadier general to that of major general.*

*General Plank, recently assigned to the Pacific, commanded the Advance Section, Communications Zone, European Theater, from the landings in Normandy until V-E Day. During the buildup for the invasion he was in command of the Eastern Base Section, S.O.S., in England, where most of our airfields were built. His last assignment prior to going overseas in July, 1942, was in the Office, Chief of Engineers, Washington, where he was in charge of the airbase development operations.*

*General Scott, now in the Plans and Operations Division, Hq., Army Service Forces, Washington, was widely credited with an outstanding job as chief of staff in the Persian Gulf Service Command from October, 1942, to February, 1944. For his work in helping to build the "road to Russia" and jam it with supplies, he was awarded an Oak Leaf cluster to his Distinguished Service Medal, received earlier for "exceptionally meritorious service" as Division Engineer, Southwestern Engineer Division, Dallas, Texas. The government of the U.S.S.R. also awarded General Scott the Order of Kutuzov, Second Class for his P.G.S.C. work in Iran.*

## New town being built on Lake Superior

A new townsite, to accommodate over 1,000 people, is to be built on the isolated north shore of Lake Superior at Marathon, 150 miles east of Fort William in connection with the building of a large pulp mill by the Marathon Paper Co. of Toronto. A contract has just been awarded to the Ontario Construction Co. Ltd., of St. Catherines, Ont., for the construction of about 200 buildings, including houses, a school, stores, a hospital and other public service buildings.

The mill and townsite are on the main line of the Canadian Pacific Railway, just to the west of Heron Bay where the line first comes within view of Lake Superior. A new station is being built by the C.P.R. to service the new development. Construction of the mill buildings and associated works have been in progress for some time by the Foundation Co. of Ontario Ltd., Toronto, Ont.

## Raymond M. Foley named commissioner of FHA

Raymond M. Foley, state director in Michigan for the Federal Housing Administration since 1934, has been named commissioner of the FHA. His nomination was confirmed July 13.

Mr. Foley, who succeeds Abner H. Ferguson, resigned, served as director of public relations for the Michigan State Highway Department in 1933. He will complete an unexpired four-year term that started in 1942.

The FHA, which is a part of the National Housing Agency, provides insurance to lending institutions making loans for repair, and improvement of buildings. The FHA also provides insurance on mortgage loans.

# FROM AN EDITOR'S NOTEBOOK

***Indians of Columbia River tribes in ceremonial powwow, protest construction of a dam that would flood their fishing grounds and, they claim, violate a treaty the white man made in 1855***

A treaty made in 1855 and witnessed, so the Indians say, "by the high mountains covered with snow, by the big rivers with fish in them and by the sun which rises in the morning and sets each night," was the subject of discussion at a meeting held at The Dalles, Ore., with the district engineer of the Engineer Corps, U. S. Army.

The meeting was held at the request of Indians of the Umatilla, Yakima and Warm Springs tribes who had heard that it was proposed to construct a dam across the Columbia River at The Dalles which would flood out rapids where these tribes for many generations have caught the fish that constitute their principal item of food.

In their colorful regalia, probably much the same as they wore in 1855, the Indians presented a spectacle typical of the old West. In attendance were Chief Colwash Yahyowan, of the Wishram Indians at Spearfish; Chief Charlie Quittocken, of the Wy-Am tribe; and Chief William Yallup, of the Rock Creek band of Yakima Indians, whose son, Thomas K. Yallup, dressed, by contrast, in a well-fitted business suit, interpreted for his chieftan father in precise English.

### *A colorful occasion*

The older chiefs all wore multicolored costumes of woven buckskin, white doeskin trimmed with furs, and decorative headdress that revealed craftsmanship of high quality.

This was a solemn occasion. The chiefs were in dead earnest, concerned for their future and mindful of the sacred rights and obligations handed down to them by their forefathers. The Indians had asked for this hearing—they would speak of their concern to the Army officer who represented the Great White Father. It was well that they should speak as their ancestors had spoken to an Army officer when the treaty was signed at Walla Walla in 1855.

Present to conduct the meeting was Col. Ralph A. Tudor, district engineer, Portland District. So that he might be properly enthroned for this ceremonial powwow, the Indians had provided for him a high-backed leather chair. Unfortunately, the chair was more decorative than serviceable; its seat sloped forward in such a way as to keep anyone who sat in it constantly sliding toward the underside of the table. It was obviously most uncomfortable and apparently constant effort was necessary to maintain a dignified position.

### *Perpetual right to fish*

Despite the fact that most of those present understood English and perhaps out of respect for some of the very old chiefs who did not, each speaker used the low guttural tones and gestures of the dialect and the translated version was relayed to the white men through an interpreter. Under the treaty of 1855, they explained, the tribes had given the white man the plains but not the mountains and not the rivers. This treaty guaranteed to the red men exclusive right to fish within their reservation limits and joint right in perpetuity to fish at their other usual fishing grounds along the Columbia.

The main theme was the 90-year-old treaty which was made "with good, clear words on both sides." This has always been kept by the Indians and could not now, with honesty, be broken by the white man. "Though the makers of the treaty are dust," said Chief Yallup, "the words that were spoken will never be lost. They are known to One who oversees all."

How much the white men got out of all this depended upon the interpreters. For example, Sally Anne Joyce, aged, fat and emphatic, was quoted by the interpreter as saying many nice things about the presiding Army officer. Some of the white men present thought that what she actually said about him probably was more in keeping with the threatening gestures she made with her fists as she pointed out (according to the interpreter) that "we do not give the white man trouble but he is always giving us trouble."

At the end of the session the presiding officer thanked the tribal chiefs and promised to report the statements and requests to Congress, saying that he had confidence the President and the Congress would deal justly with the Indians.

At this point the interpreter proved his versatility and ability in Indian relationships by the invitation, "Shall we clap?" This met with unanimous approval and everyone did. He then said "Ugh" and most of the audience said "How" which was official closure of the session.—N.A.B.

*U. S. Signal Corps photo*

## Repairing an 1800-year-old China bridge

***Now under reconstruction by Burma Road engineers and Chinese coolies, the 1,800-yr. old bridge over the Yuan Hwo River at Chihkiang, China, will soon accommodate heavy convoy traffic. One-way traffic is maintained during rebuilding operations.***

***Wooden beams of the 15 spans, which total 756 ft. in length, have been replaced numerous times during the long life of the bridge, but its stone abutments and piers still hold firm and will form the substructure of the rehabilitated river crossing.***

## "Surplus" Alaskan port is being dismantled

Seven hundred German prisoners of war will be used to dismantle an $18,000,000 Army port, built in secret in an Alaskan inlet and used less than a year, Col. Conrad Hardy, Seattle District Army engineer, revealed recently. Salvage operations began July 15. It is estimated that 12,000,000 bd.ft. of lumber and $3,000,000 of other critical materials can be shipped to other Pacific ports.

The project was authorized in July, 1942, by the Western Defense Command to provide a transshipment point where barges from the United States could transfer military supplies to ocean-going vessels en route to Kodiak and Aleutian Islands installations.

The terminal is in Excursion Inlet, midway between Juneau and Cape Spencer on the Gulf of Alaska and about 950 miles north of Seattle. Construction was begun August 3, 1942, by the Guy F. Atkinson Co. of San Francisco, and the plant was put in use in November, 1943. It was built to accommodate nine ocean-going vessels, six barges, two ammunition ships and two tankers. It included an oil and gasoline tank farm with a capacity of 3,400,000 gal.

The facility was declared surplus to War Department needs and assigned to the Pacific Division engineer for disposal Oct. 26, 1944. Major Arvid K. Reed of Seattle will be in charge of the dismantling operation.

## Argentine engineers here to study airports

L. M. Zalazar, chief of design of the Argentine Highway Department (Direccion Nacional de Vialidad), one of the outstanding engineers of Argentina, is in Washington for a short time prior to starting a tour of the United States. Mr. Zalazar expects to be in the United States for three or four months and will give special attention to the study of the design and construction of airports. He is accompanied by N. A. Binda, also connected with the Argentine Highway Department. They may be reached in care of Thomas McDonald, Commissioner of Public Roads, Public Roads Administration, Washington, D. C.

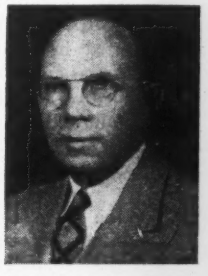
## Division engineers named in PRA reorganization

As part of the program of reorganization of the Federal Works Agency announced early this year (*ENR* March 8, vol. p. 299) division engineers have been selected by the Public Roads Administration for the new divisions set up by the FWA. The general program calls for nine division offices at which each of the FWA agencies will have a representative. For the present, however, there will be ten PRA division engineers due to the fact that the PRA has divided Division 5 into two parts, Division 5 North and Division 5 South, with a division engineer in charge of each. Formerly, the PRA had fourteen districts, including that in Alaska.

The geographical make-up of each division is shown under the division engineers' pictures below. In two instances the make-up of the new divisions does not agree with that shown in the March report. Ohio has been shifted from Division 4 to Division 2, and Wisconsin has been shifted from 4 to 5 North.

L. I. Hewes will continue his work on the West Coast with the title of chief of western headquarters, being in general charge of Divisions 7, 8 and 9. In the past he had the title chief of the western region, supervising work in the states now included in the three divisions listed.

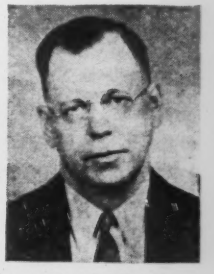
*A. G. BRUCE*
*Division 1, Albany*
*(Me., N. H., Vt., Mass., Conn., R.I., N.Y., N.J.)*



*C. E. SWAIN*
*Division 2, Washington*
*(Del., Md., Ohio, Penn., D.C., Va., W.Va.)*

*B. P. McWHORTER*
*Division 3, Atlanta*
*(Ala., Fla., Ga., Miss., Tenn., N.C., S.C.)*

*J. T. VOSHELL*
*Division 4, Chicago*
*(Illinois, Indiana, Kentucky, Michigan)*



*SAMUEL L. TAYLOR*
*Division 5N, St. Paul*
*(North and South Dakota, Minn., and Wis.)*

*CLIFFORD SHOEMAKER*
*Division 5S, Kansas City*
*(Iowa, Kansas, Missouri, Nebraska)*

*J. A. ELLIOTT*
*Division 6, Fort Worth*
*(Arkansas, Louisiana, Oklahoma, Texas)*

*C. C. MORRIS*
*Division 7, San Francisco*
*(Arizona, California, Nevada, Hawaii)*

*W. H. LYNCH*
*Division 8, Portland*
*(Mont., Oregon, Idaho, Washington, Alaska)*

*B. W. MATTESON*
*Division 9, Denver*
*(Colorado, New Mexico, Wyoming, Utah)*

# Highway maintenance in some states curtailed by labor shortage

### Inability to compete with war industries because rates are fixed by law affects highway work adversely

Critical conditions with respect to highway maintenance are reported from scattered parts of the country due to the inability of state highway departments operating under rates fixed by law to compete with industries that can offer higher rates and plenty of overtime. This condition, however, is far from general, chiefly because many states are now paying reasonably good rates for highway maintenance work.

#### Some shortage reported

A report that North Carolina, where the common-labor rate on highway maintenance is fixed at 40c., is having serious difficulties in keeping adequate maintenance forces together, led this journal to inquire of several other highway departments in various parts of the country to determine whether that condition is widespread. Critical conditions were reported from Kansas, Wyoming, Louisiana and Tennessee.

Both common labor and equipment operators are hard to get in Kansas. In Louisiana, the maintenance labor turnover is practically 100 percent due to competition with war industries. The only maintenance labor that is available in Tennessee is labor that can live at home. Floating maintenance operations were badly crippled, but are slowly recovering. Trouble in Wyoming is limited to the southern tier of counties along the Union Pacific Ry.

#### Conditions elsewhere

Difficulties in obtaining an adequate supply of labor were reported by California, New York, Minnesota, Washington and Florida. California is shorthanded, but the situation is not serious. Maintenance labor is paid $140 to $180 per average month of 168 hours. Minnesota pays 75c. for common and 95c for semiskilled on a monthly basis. Florida does its maintenance work with convict labor. Its shortage is in skilled and semi-skilled labor.

The state of Washington pays $7.80 to $8.20 a day for a 40-hr. week, and it pays overtime, which is not the case in some states. Nevertheless, monthly earnings are higher in industries due to higher base rates and more overtime. About the only men who can be obtained now are older men not able to holds jobs elsewhere.

U. S. Army Signal Corps photo

## Completing first U. S. Army R. R. bridge over Danube

*In the middle of May, Cos. E and F of the 347th Engineer General Service Regt. completed the first railroad bridge to be built by the U. S. Army Engineers over the Danube River in Germany. The bridge, an unusually high structure near Regensburg, Bavaria, is of meter-beam spans resting on light steel trestling piers, except where undamaged abutments and piers of the original bridge at the site could be utilized. A captured German crane was used to raise the wooden ties to I-beam level. The bridge is 300 ft. long and 50 ft. above normal water surface of the river.*

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## Water consultants named for Philadelphia survey

A board of five consulting engineers to make a report on future development of water supplies has been appointed on the recommendation of the Philadelphia Water Commission, an advisory citizen committee. The appointments were recently announced by Mayor Bernard Samuel.

The board consists of Charles Emerson, New York; Francis Friel, Philadelphia; Nathan Jacobs, Pittsburgh; Joel Justin, Philadelphia; and Gustav Requardt, Baltimore. Their report is to be completed in nine months.

Selection of the engineers follows a long period of citizen agitation for action leading to the improvement of water supplies. The consulting board is expected to make recommendations for the rehabilitation of existing facilities (for which $19 million was appropriated in 1940), as well as investigate new sources of supply. The latter may involve development of Pocono mountain and upper Delaware River sources, the cost of which might be as high as $300 million.

At present the city draws water from the lower Delaware River (Torresdale filters furnishing 200 mgd.), and from the Schuylkill River. Four filtration plants on the latter have a total capacity of 200 mgd. Present consumption in Philadelphia averages 335 mgd.

• • •

## Whitney Stone, new pres. of Stone & Webster, Inc.

Whitney Stone has been elected president of Stone and Webster, Inc., succeeding George O. Muhfeld, who becomes vice chairman of the board of directors. Mr. Stone joined the firm in 1930 and became an executive vice-president in 1936. He is a son of the late Charles A. Stone, who with Edwin S. Webster, present chairman of the board, organized the firm as a partnership in 1899.

# MEN AT WORK

*A. E. (JACK) GRAHAM, vice-president of the Pacific Bridge Co. of San Francisco and Portland, Ore., was presented the Medal of Merit Award by Adm. R. E. INGERSOLL, USN, Commander Western Sea Frontier, in San Francisco on July 4. The award, one of the highest a civilian may receive and rarely given, was made on behalf of former President Franklin D. Roosevelt, for outstanding services in salvage operations and repair of naval vessels damaged or sunk by Japanese action at Pearl Harbor.*

*Amphibian Engineer COL. WAYNE S. MOORE (3d from left and facing camera) whose hometown is Wilmington, N. C., is shown in conference with his staff on the beach during the assault phase of a recent landing operation in the Philippines. His staff includes (L to R) CAPT. PAUL J. KELCHAK, Wheeling, West Va., LT. COL. DE WITT L. McCLALLEN of Mulberry, Ark., CAPT. JALMER L. ANDERSON from Syracuse, N. Y., and LT. COL. ROBERT AMORY whose home is Milton, Mass.*

*Supervisory forces of C. A. Pitts, General Contractor, Limited, who have just completed the earthwork and bridging for a 15-mile single-track connection between two sections of the Canadian National Railway around the northern side of Montreal. Pictured left to right are: C. A. PITTS, president; RUPERT YOUNG, secretary and treasurer; N. S. BATEMAN, consulting construction engineer; MAURICE MISSIEAN, mechanical superintendent; and Edw. MISSIEAN, assistant superintendent of construction.*

## Public Health Service officers get new status

By Executive Order (No. 9575) President Truman has declared the commissioned corps of the U. S. Public Health Service to be in military service and a branch of the land and naval forces of the United States. As a result of this order, commissioned officers of the service will have the benefits and be subject to the regulations applicable to officers of the Navy. Some 375 engineer officers are affected by the order.

Admiral J. K. Hoskins, chief of the sanitary engineering division of the service, this week told an *Engineering News-Record* representative that no change in policy would result from the order. He stressed, however, that major benefits would result. For example, in the past, officers of the service assigned to the U. S. Coast Guard, had the insurance and reemployment benefits of the commissioned personnel of the Navy, while officers assigned to such agencies as the Federal Public Housing Authority were without these benefits, although doing the same kind of work. The new order will remove this inconsistency.

The order also places officers under the same disciplinary procedures specified in the articles for the government of the Navy.

### Two new programs started

After discussing the new order Admiral Hoskins revealed that his staff recently began two new programs. In cooperation with the War Shipping Administration the Public Health Service is training ship sanitation crews to inspect all vessels under the U. S. flag when they enter American ports. The men to do this work are being trained in New York City under direction of Comdr. A. P. Miller, senior sanitary engineer in general charge.

The other new program is aimed at greater cooperation among the American Red Cross, the Public Health Service, and state and local health and sanitation groups. Sometimes in the past the Red Cross, because of not being familiar or in frequent contact with state and local health engineers, worked more or less independently of these groups in devastated areas. To overcome this disadvantage Public Health Service engineers have been assigned to the Red Cross as consultants on matters of sanitation.

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The Drycemble Corp., Los Angeles, Calif., will build at Houston, Tex., 1,000 prefabricated houses for England. Each house, 24x24 ft. when assembled, will be shipped in seven large crates. The houses will be sold, knocked down, for $1300.

## Communication possible with moving equipment

An investigation of what is desired in postwar trucks, just completed by *Engineering News-Record's* Department of Market Surveys, has shown that about one-fourth of the construction-truck owners, ready-mix operators and state highway departments would like two-way radio communication with their trucks while 40 percent of the county officials replying want such a facility. Range of communication needed is indicated as 5 to 200 miles, though some suggested distances up to 1100 miles.

Coincidental with completion of the survey, American Telephone & Telegraph Co. has announced a system of communication with moving cars and trucks integrated with the wire phone network of the Bell system, as a public utility. Radio would be used to transmit two-way messages from the moving vehicle to a Bell operated station where it would be connected to the wire circuit for completion of the transmission. A less costly one-way device would give a visible or audible signal to the vehicle operator that he is to telephone his headquarters.

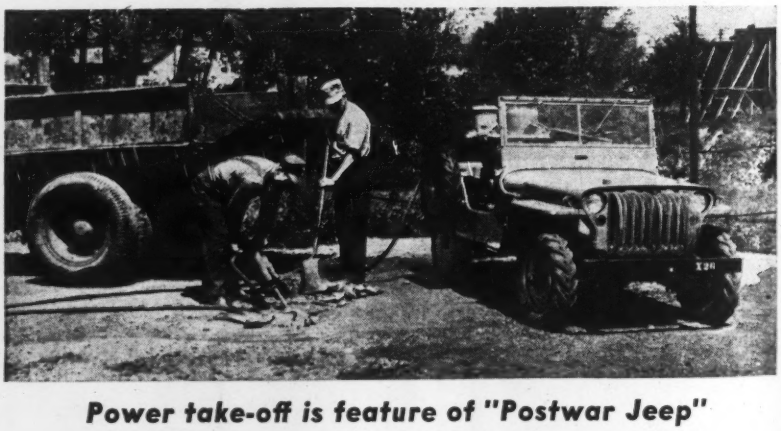
Privately operated two-way radio circuits also are used for communication where phone communication is not available. Some of the large ordnance plants recently built had such a system (*ENR* Aug. 7, 1941, vol. p. 188). However, the proposed Bell system would require less radio channels by using them more on a "party-line" basis.

## Gen. Vaughn commands our Port of Bremen

Announcement has recently been made that the Port of Bremen, that is, Bremerhaven, which will be the American port for supplying our Army of Occupation in Germany, is under the command of Maj. Gen. Harry B. Vaughn, Jr., well known Engineer officer. General Vaughn headed the United Kingdom Base, Communications Zone, European Theater of Operations, for a year, from March, 1944, to March, 1945, first as deputy and then, after Sept. 1, 1944, as commanding general. In effect, he succeeded Lt. Gen. John C. H. Lee in England, when that Engineer officer moved to France after D-Day.

As U. S. district engineer in Philadelphia from 1940 until 1943, General Vaughn was in charge of the development of Army Engineer marine equipment. More than anyone else, he is responsible for the great fleet of dredges and port repair ships that opened the wrecked harbors of Europe and are now moving on the Pacific. He was chief of the Marine Design Division of the Office of the Chief of Engineers in Washington from 1937 to 1940, and he also retained that position, during his three year stay in Philadelphia. One of his outstanding accomplishments is the development of the depth finder, a recording supersonic sounding instrument for underwater surveys.

Recently on leave in the United States, General Vaughn has now returned to Germany.



## Power take-off is feature of "Postwar Jeep"

***A power take-off is a feature of a civilian version of the war-developed four-wheel drive jeep to be made by the Willys-Overland Motors Co. of Toledo for postwar markets. The power take-off will develop 30 hp. and can be used to operate various kinds of equipment, either direct-connected, as the air compressor shown, or driven by belt.***

***Another feature, not shown, is a capstan with a line pull of 5,000 lb. available for mounting on the frame between the bumper and the radiator. It is driven from the front end of the engine crankshaft.***

***Changed gear-ratios in the new model are said to give maximum efficiency at 7.5 mph., with a continuous draw-bar pull of 1,200 lb., yet permit road speeds of 60 mph.***

# MEN AND JOBS

**Lt. Comdr. Robert L. Roberts,** of East Greenwich, R. I., acting officer-in-charge of the 97th U. S. Naval Construction Battalion, has been recommended for award of commendation (with ribbon) "For exceptionally meritorious service while serving with the 13th U. S. Naval Construction Regiment as project manager for N. L. Pontoon Construction during the preparation for the assault upon the continent of Europe and during the buildup of military forces in the European campaign and while serving as assistant public works officer on the staff of commander, Amphibious Bases United Kingdom during the buildup of military forces in the European campaign, which resulted in the final victory of 8 May 1945."

Commander Roberts was commissioned lieutenant (junior grade), Civil Engineer Corps, U. S. Naval Reserve, in October, 1941. He was formerly associated with the Corps of Engineers, United States Army, at Huntington, W. Va. in the design department.

**C. U. Smith,** former chief engineer of the Milwaukee, Wis., Harbor Commission, has been appointed city engineer of Lindsay, Calif.

**C. B. Croasdale,** chief engineer in the department of highways of New Brunswick has resigned. He has been chief engineer since 1935 and entered the service as resident engineer in 1920.

**Richard S. Holmgren,** former Federal Power Commission engineer in Berkeley, Calif., recently became one of three assistant engineers to J. L. Burkholder, manager-engineer of the San Diego County Water Authority. Mr. Holmgren, a graduate of Massachusetts Institute of Technology, at one time was assistant engineer of the Boston Metropolitan Water District, and he recently was associated with Pacific Bridge Co. of Alameda, Calif., in the manufacture of dry docks.

**Charles Blythe Elliott,** with the Bureau of Reclamation for 29 years, has been made chief of the division of irrigation and operations, branch of operation and maintenance, of the Bureau's Region III, Boulder City, Nev., it was announced recently. Mr. Elliott was associated with the Uncompahgre Project in Colorado and the Yuma Project in Arizona before going to Boulder City.

**Second Lt. Louie L. Hulme,** former civil engineer for the Santa Fe Railroad at Amarillo, Tex., is now serving as a pilot of a troop carrier plane in the Pacific. Lieutenant Hulme was educated at Baylor University, Waco, Tex.

**Thomas G. MacKenzie,** Gary, succeeds **Charles H. Bechert** as head of the Indiana Conservation Department's division of engineering. Mr. Bechert will remain with the department in another capacity.

**A. B. Cook,** assistant city engineer at Waterloo, Ia., has been appointed acting city engineer to replace **Nathan B. Barber,** who has joined the Waterloo, Cedar Falls & Northern Railroad.

**Willis E. Briscoe** has been appointed city engineer for Wellington, Kan. He was formerly with the Bureau of Reclamation of the Department of the Interior. He is also a veteran of the present war, having served overseas for sixteen months. He was a captain.

**H. Earl Hochenedel,** Fremont, resident engineer, Ohio Department of Highways, has been promoted to lieutenant commander in a Navy construction battalion upon his return after two years in the South Pacific.

**Col. Ellis E. Haring** has resumed his duties as district engineer of the U. S. Army Engineer Office at Wilmington, N. C., replacing Maj. Paul E. Werner, who had been acting engineer. A native of Denver, Colo., Col. Haring has been with the Army Engineers since August, 1917.

**Carlos A. Weber** of Lansing has been appointed road engineer of the Michigan State Highway Department. Other promotions include: **Frank J. Halliday,** district road construction engineer in Grand Rapids; **N. W. Paquette,** district maintenance engineer in Grand Rapids; **T. C. Banhagle,** district maintenance engineer in Kalamazoo. Mr. Banhagle succeeds **Maj. Spencer J. Stewart,** placed on the retired list recently. Four engineers in the bridge division have been appointed as district bridge engineers. They are **L. D. Abbey,** Grand Rapids; **Maynard D. Bailey,** Saginaw; **Harold J. Conroy,** Cadillac; and **Paul Ueberhorst,** metropolitan area.

**Arthur Warner,** 71, deputy county engineer of Montgomery County, Dayton, Ohio, for 35 years, retired June 15. For all that time he had worked on the tax maps. He is succeeded by **Edward G. Lucas.**

**W. Allen Clark,** engineer, has been employed by the Mt. Pleasant, Mich., city commission as acting city manager, in place of Leo Mullholand, who resigned recently. A graduate of the University of Michigan's engineering school, Clark has been operating a surveying service since 1934.

**Thomas B. Casey** has been appointed chief engineer of the Illinois state division of waterways. He has been acting chief engineer for the last three years, following the resignation of Carter Jenkins. Mr. Casey joined the staff of the division in 1932.

**Capt. Kerwin Mick** has been elected chief engineer and superintendent of the St. Paul-Minneapolis sewage disposal plant by the board of trustees of the Metropolitan Drainage Commission. Captain Mick succeeds George J. Schroepfer, who becomes a member of the faculty of the University of Minnesota, Sanitary Engineering Department, in September. Captain Mick was graduated from the University of Minnesota as a chemical engineer in 1930, and was chief chemist at the sewage disposal plant until 1942 when he went into military service. He is now overseas in the Pacific.

**Earl E. Chadwick** has resigned as city engineer of Winona, Minn. He has been succeeded by **Carl W. Frank,** formerly city engineer of New Ulm, then with the Northwest Air Lines and more recently with Ralph D. Thomas, consulting engineer, Minneapolis.

**Don A. Bell,** Portland, Ore., is city engineer of Seaside, Ore. A graduate of the school of engineering at Oregon State College, he previously had worked for the Oregon State Highway Department and the U. S. Army Engineers.

**Albert L. Nowicki,** Milwaukee, Wis., a 1930 graduate of the School of Civil Engineering and an instructor in civil engineering at Marquette University since 1938, has been promoted from captain to major. He is a cartographic officer in the Engineers' section of the 6th Army Group.

# ENGINEERING SCHOOL NEWS

Dean S. S. Steinberg of the College of Engineering at the University of Maryland has left on a goodwill tour of Latin America in the interest of engineering education. He will travel as the guest of the Department of State in behalf of its Division of Cultural Cooperation. His itinerary includes visits to Colombia, Ecuador, Peru, Chile, Argentina, Uruguay, Brazil, Venezuela, Panama, Costa Rica, Mexico and Cuba. He plans to return to the University by the end of October. The purpose of his trip is to make a survey of engineering education in the other American republics; promote closer relations between the engineering educators of Latin America and those of the United States; arrange for exchange of professors; and provide for a wider interchange of engineering and technical publications. Dean Steinberg has been designated official representative of the Society for the Promotion of Engineering Education whose membership includes representatives from all the engineering colleges in the United States and Canada.

Appointment of Lauren Earl Seeley as dean of the college of technology at the University of New Hampshire has been announced by President Harold W. Stoke. He succeeds George W. Case, who has retired. Mr. Seeley is associate professor of mechanical engineering at Yale University where he has taught since 1923. Until recently he has been regional advisor in Connecticut and Rhode Island for the engineering, science and management war training program of the U. S. Office of Education.

J. A. Orr of the civil engineering department of Texas A. & M. College has been selected by the War Department to go to Fontainbleau, France, as an instructor in the university there. He is expected to be gone about seven months.

A group of Mexican industrialists is making plans to convert the old Tepozotlan convent in Mexico City into a $6,000,000 technological institute. It is expected that the project, in conjunction with a $1,250,000 technological institute now being constructed at Monterrey and the national industrial laboratories in Mexico City, will go a long way toward solving Mexico's technological deficiency.

The old Rayen School in Youngstown, Ohio, is being remodeled into the new William Rayen Technical Institute of Youngstown College, at a cost of over $100,000. The school is to be ready this fall, announced Howard W. Jones, college president. The remodeling work is being rushed to accommodate returning veterans interested in engineering courses.

Plans to erect a naval school building by the University of Rochester, Rochester, N. Y., at a cost of $160,000 are announced by the university. A. W. Hopeman & Sons are the general contractors and work is to start immediately. The structure will adjoin the engineering building and will be so constructed that it can be adapted to the use of the engineering department when no longer needed for naval purposes. A naval reserve unit of 300 will be trained there.

The Moore Scientific School of the University of Pennsylvania will enlarge its engineering building by adding a third story to its building on the campus. Paul R. Cret, is the architect. William R. Sauter is the engineer, and the general contract for the work has been awarded to the United Engineering and Constructors, Inc. The addition will provide space and facilities to assist the scientific and engineering students after the war.

A $750,000 materials and soil testing laboratory will be built by the New York State Department of Public Works at Syracuse University on a 35-acre tract near the campus. Construction will begin as soon as priorities for materials can be obtained. The new laboratory will supplement the present one at Albany.

The University of Illinois has announced plans for a comprehensive research, experiment and demonstration project attacking the problem of good low-cost housing. To conduct related experiments simultaneously, a 4-block area containing a $400,000 demonstration center and production yard with three blocks of test houses surrounding it will be provided.

George J. Schroepfer, chief engineer and superintendent of the Minneapolis-St. Paul sanitary district, has resigned to become professor of sanitary engineering at the University of Minnesota. He was appointed chief engineer when the Twin Cities plant was put in operation, and has remained in charge of the $17,750,000 sewage disposal system throughout its seven years of operation, during which 270,000,000 gal. of sewage have been treated.

Herman L. Donovan, president of the University of Kentucky, says that the university will ask the 1946 legislature for funds to establish a state-supported engineering experiment station to promote conservation and utilization of Kentucky resources. He said it had been determined that $50,000 a year would be needed to employ personnel and handle other matters of organization. Much of the equipment and adequate housing facilities are available on the University campus.

Doubling of staff, classroom facilities and laboratory and drafting equipment for engineering and science students at the University of Toronto, will be necessary to take care adequately of its share of the 35,000 new students expected from the armed forces of Canada, according to Sidney E. Smith, president-elect.

Of the 35,000 ex-service students already expected, fifty to sixty percent will take engineering or pure science courses, according to Dr. Smith.

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## Much road work planned for New York State

About one-third of New York State's system of highways will be rebuilt with modern pavements after the war, Charles H. Sells, state superintendent of public works, told a large group of representatives of automotive industries meeting in Syracuse recently.

"Practically every feature of highway development is included in the post-war program," said Mr. Sells. "Narrow, inadequate bridges will be replaced; the railroad grade-crossing elimination program will be completed and perhaps another one begun.

"A start will be made on construction of city arterial highways; many traffic bottlenecks will be removed from the midst of our villages; secondary rural roads will be improved; state parkways will be extended and many existing highway-railroad grade separations are to be revamped to meet modern demands.

"A throughway will provide the most up-to-date highway in existence, linking most large centers of the state. Highway maintenance and repair shops will be brought up to a standard that will enable them to serve the people of the state adequately as demands increase."

## No surplus equipment to be sold in July

No sales of surplus equipment will be held during July by the Office of Surplus Property of the Department of Commerce, it was said by E. P. Phillips, director of the machinery division, at a recent meeting in Chicago of the public relations directors of the Washington and regional offices. This month will be devoted to the taking of inventories of equipment on hand in the eleven regions. This will afford an opportunity for the Office of Surplus Property to satisfy priority requirements of the federal and non-federal agencies.

After the regional offices have processed their inventories and taken care of July priority requests, all remaining equipment and machinery will be offered for commercial sale. This move is designed to not only "gear up" the entire program, but also to expedite the disposal of equipment now in the Army depots to provide additional storage urgently needed for the anticipated increased volume of business.

Beginning Aug. 1 all sales will be of current equipment, with federal and non-federal agency priority requirements being fulfilled during the month immediately preceding that in which it is offered for commercial sale.

### August quota is $2,000,000

The estimated quota of surplus construction equipment to be sold at the August sales has been set at $2,000,000, said Mr. Phillips, but the actual amount will depend on the quantity available at that time. Based on past sales, not more than 5 percent is expected to be claimed by the priority groups, he said.

Recently compiled data on the May cycle of sales disclosed that 4,250 units of construction equipment were sold during that period for a total of $1,200,000 under the new synchronized plan of scheduling spot sales throughout the country to minimize travel for the buyers, said Mr. Phillips. The quota for May had been set at $1,000,000. Also, for the first time, the machinery section of the Office of Surplus Property got complete distribution in all the 48 states.

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## The Waterloo Bridge goes to Holland

Dutch engineers will use the seven spans of London's old Waterloo Bridge, replaced by a new structure during the war, to rush the reconstruction of several important railway bridges in Holland. Waterloo's longest span is 280 ft. long, the second, 150 ft., and the remaining five measure about 135 ft.

One of the spans will be used to repair Moerdijk Bridge, the longest and most famous span in Holland, straddling Hollandsche Diep south of Rotterdam. Across it runs the railroad to southern Holland, Belgium and France. Some 1,500 ft. of the structure was demolished by the Germans last September.

The longest span will be used in repairing the Caterveer Bridge over the Ijsel river near Zwolle which links the northeastern provinces with the main railroad networks to the west. Reconstruction officials have been using Bailey spans at some crossings but these must be replaced with permanent structures as soon as possible. At least 70,000 tons of steel will be used for the bridges across the big rivers in central Holland.

# JOBS OF THE WEEK

**AIRFIELD IMPROVEMENTS, Chatham Field, Ga.**

U. S. Engineers, Savannah, awarded a contract for improving Chatham Field to Warren Brothers Roads Co., Cambridge, Mass., and H. E. Wolfe Construction Co., Inc., St. Augustine, Fla., at $2,521,381.

**AIRFIELD IMPROVEMENTS, MacDill Field, Fla.**

U. S. Engineers, Savannah, Ga., awarded a contract to improve airfield, to W. C. Shepherd Co., Inc., Atlanta, Ga., at $2,433,099.

**STOREHOUSES, Mechanicsburg, Pa.**

Corbetta Construction Co., New York, N. Y., has been awarded a contract for the construction of 5 storehouses for Bureau of Yards & Docks, Navy Department, Washington, D. C., at $2,335,000.

**STEEL MILLS, Talcahuano, Chile**

Government of Chile, Santiago, will construct steel mills by its own forces at an estimated cost of $10,000,000. H. A. Brassert & Co., New York, N. Y., are the engineers.

**FEDERAL BUILDING, Torreon, Mexico**

State of Coahuila, Saltillo, will construct with local workers, a 3-story, federal building to cost about $1,000,000.

**FACTORY, Stamford, Conn.**

Turner Construction Co., New York, N. Y., has been awarded a contract for a 3-story, brick and steel factory on Walnut St. for Pitney-Bowes Postage Meter Co., Stamford, Conn. The estimated cost is $1,250,000. Voorhees, Walker, Foley & Smith, New York, N. Y., are the architects.

**FEDERAL OFFICE BUILDING, Suitland, Md.**

Charles H. Tompkins Co., Washington, D. C., was the lowest bidder at $1,322,000 for federal office building No. 4 when Public Buildings Administration, Washington, D. C., opened bids.

**SEWERS, Cuyahoga Heights, O.**

Village of Cuyahoga Heights, received the lowest bid for construction of a combined storm and sanitary sewer and sanitary interceptor from Kalill Co., Cleveland. The lowest bid for brick construction was $984,084; and for prelined concrete pipe, $957,998. John A. Betsche is the village engineer.

**HOUSING, Anacostia, D. C.**

Public Housing Authority, Washington, D. C., received the lowest bid for the construction of 300 permanent family dwelling units from Haris Construction Co., Brooklyn, N. Y., at $1,589,000.

**HOUSING PROJECT, Chicago, Ill.**

Chicago Housing Authority, Chicago, awarded a contract for constructing of a housing project of 40 buildings, including power house and community building to Sherry-Richards Co., Chicago, Ill., at $2,342,000. Loebel & Schlossman, Chicago, are the architects.

**MACHINE SHOP, Terminal Island, Calif.**

James I. Barnes Construction Co., will build machine shop extensions, at Naval Drydocks, for the Bureau of Yards & Docks, Navy Department, Washington, D. C., at $1,381,000.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 17.

## OBITUARY

**Col. Charles W. Stewart, Jr.,** 45, native of the District of Columbia and veteran of 26 years of service in the Army, died on July 7 at Frankfort, Germany, where he was assigned to Supreme Headquarters of the Allied Expeditionary Forces, the Office of the Chief of Engineers reported late last week. An engineer officer, Col. Stewart had been overseas with SHAEF since late in 1944. Upon graduation from West Point in 1923, Col. Stewart was commissioned in the Corps of Engineers and served with the First Engineers. In 1938 he was made instructor at the Engineer School, Fort Belvoir, and in 1939 was on maneuvers with the First Engineers. He was assigned to the Office of the Chief of Staff in Washington in 1941, later serving at General Headquarters of the Army War College before returning to the Office of Chief of Staff in 1942. He served in that position until going overseas.

**Ennis P. Harris,** 75, Bowling Green, Ky., former county road engineer and member of the Board of Works, died July 8.

**Capt. L. Herndon Witt,** of the Corps of Engineers died of gunshot wounds at Rangoon, Burma, on June 18. He had been making analyses of captured enemy equipment in the China-Burma-India area since the early part of this year. He was formerly an employee of the Caterpillar Tractor Co.

**Daniel C. Godfrey,** 95, North Wildwood, N. J., contractor and builder, and city building inspector died July 13. He was the oldest municipal official in New Jersey.

**Aubrey Moss,** 59, superintendent of the Benzie County, Mich., road commission for the past 11 years, died July 5. Mr. Moss was one of the outstanding highway maintenance engineers in northern Michigan. Under his direction 81 miles of blacktop were laid in Benzie County through WPA. Before entering the highway service, Mr. Moss was a private contractor engaged in highway and bridge work.

**C. E. Kauffmann,** 86, who headed the bridge division of the Atlanta, Ga., construction department for 35 years, died July 6.

**Lt. William C. Robinson,** 39, who was stationed with United States Engineers at Syracuse, N. Y., for two years, died at Grand Junction, Col. July 6. He was enroute to a new assignment. Before going to Syracuse, Lieutenant Robinson had served with the 334th Engineer Regiment in Iran and Iraq.

**Albert Ernest Jupp,** 61, president of the A. E. Jupp Construction Co. Ltd., Toronto, Ont., died July 11.

**Edgar C. Faris,** 64, a Kansas City, Mo., and Miami, Fla., builder and a structural engineer for the FHA in Washington, died July 5 in Hollywood, Fla.

**George S. Frasch,** 49, an engineer with the Philadelphia, Pa., Water Bureau and a city employe for 27 years, died July 4. He was in the bureau's high pressure water department.

**John Strange Hopper,** 50, retired civil engineer of Seattle, Wash., died in that city June 28. Born in Ohio, he had lived in Seattle nine years.

**W. G. Wilson,** 48, Asheville, N. C., building contractor and owner of the Wilson Construction Co., died June 26.

**H. H. Garrigues,** 64, retired assistant to the general manager of the Pennsylvania Railroad's Eastern region, died at Radnor, Pa., July 15.

Born in Harrisburg, Mr. Garrigues attended Haverford College. He entered the engineering department of the Pennsylvania Railroad in 1901, remaining with the road until February of this year, when he retired.

A month after he became superintendent of the Philadelphia terminal division in May, 1923, he was faced with the responsibility of handling the emergency created by the first Broad Street Station fire, which on June 11 destroyed the great train shed and sixteen tracks. Under his supervision the work began immediately and on the next day every scheduled train in and out of Philadelphia was in operation.

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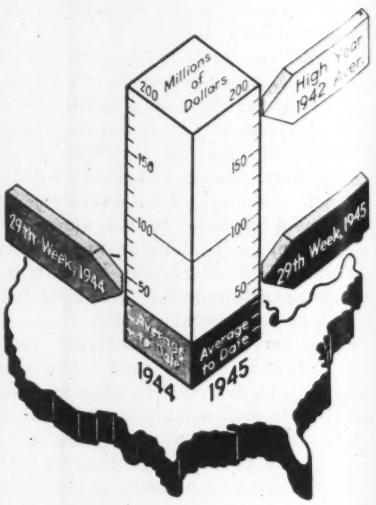
## Gen. Fleming, FWA head, now in Sweden

At the request of President Truman, Maj. Gen. Philip B. Fleming, Administrator of the Federal Works Agency, is now in Sweden. He is making a study of that country's construction plans for the postwar period with special attention to housing and highway construction. Several other countries will be visited by General Fleming before he returns. There also he will discuss reconstruction plans. Last year he visited England and Russia.

## CONSTRUCTION ACTIVITY




As Reported This Week to...
*Engineering News-Record*

### CONTRACT VOLUME

**Continental U. S. Only (Thousands of Dollars)**

| | Week of July 19 1945 | Cumulative 1945 (29 wk.) | Cumulative 1944 (29 wk.) |
|---|---|---|---|
| Federal | $30,862 | $559,303 | $655,399 |
| State & Munic. | 10,854 | 158,597 | 129,705 |
| Total Public. | $41,716 | $717,900 | $785,104 |
| Total Private. | 8,349 | 288,149 | 224,221 |
| **U. S. Total** | **$50,065** | **$1,006,049** | **$1,009,325** |

### WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

| Type of Work | Dollar Volume (Thousands) This Week | Cumulative 1945 (29 wk.) | Cumulative 1944 (29 wk.) |
|---|---|---|---|
| Waterworks | $1,554 | $23,773 | $16,809 |
| Sewerage | 755 | 16,339 | 15,765 |
| Bridges | 1,373 | 14,938 | 7,312 |
| Highways | 8,860 | 116,442 | 116,258 |
| Earthwork, Waterways | 307 | 21,373 | 33,732 |
| Buildings, Public. | 16,110 | 340,981 | 360,345 |
| Industrial | 5,602 | 195,807 | 95,162 |
| Commercial | 1,785 | 56,960 | 95,028 |
| Unclassified | 13,719 | 219,436 | 268,914 |

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

### NEW PRODUCTIVE CAPITAL

| | Cumulative 1945 (29 wk.) | Cumulative 1944 (29 wk.) |
|---|---|---|
| NON-FEDERAL | $472,613 | $290,045 |
| Corporate Securities. | 90,408 | 85,845 |
| State and Municipal. | 218,605 | 64,770 |
| RFC Loans | 24,600 | 56,430 |
| REA Loans | 60,000 | 20,000 |
| Fed. Aid, Highway.. | 79,000 | 63,000 |
| FEDERAL | $1,005,325 | $475,806 |
| **Total Capital** | **$1,477,938** | **$765,851** |

### ENR INDEX NUMBERS

| Index Base = 100 | | 1913 | 1926 |
|---|---|---|---|
| Construction Cost.. | July '45 | 308.99 | 148.53 |
| Building Cost | July '45 | 239.64 | 129.54 |
| Volume | June '45 | 133 | 58 |